from the tenth century, they were actually a thousand years older, because examples can be found in the *Chiu Chang Suan Shu* (Nine Chapters on the Mathematical Art), a Han work.

The third book takes up the subject of magic squares, indeterminate analysis, and musical and calendrical calculations. It also discusses the solution of simultaneous linear equations, a subject which has close connections with Diophantus in Greece and Mahavira in India. There are also problems on variation, and problems involving fractions, linear equations in one unknown, and proportional parts, together with the extraction of nonintegral roots.

All in all, Lam Lay-Yong has produced a splendid contribution to the existing literature on the history of Chinese mathematics and translations of original texts. Perhaps owing to a slight measure of undue modesty, the author has been inclined at times to abbreviate her commentary, so that it will be desirable to read her book in conjuction with what other historians of mathematics have said previously on the same subject; but the precious element here is the complete translation of the text of Yang Hui himself, and this will be indispensable for future scholarly research, especially on the part of historians of mathematics who cannot themselves read Chinese. In addition, the work is rich in clear explanations of the technical terms used by the thirteenth-century Chinese mathematicians, and that in itself would render it an indispensable acquisition for the shelves of all historians of mediaeval mathematics.

FELIX KLEIN AND SOPHUS LIE. By I. M. Yaglom. (In Russian.) Mathematics and Cybernetics, No. 11. Moscow (Znanie). 1977.

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This monograph, intended for a general readership, explains lucidly the basic principles of Galois theory, Lie groups, and Klein's geometrical innovations. It also contains interesting scientific as well as biographical details about many prominent geometers of the nineteenth and early twentieth centuries--from Galois and Jordan up to Poincaré. The author describes vividly the interaction as well as the antagonism which existed between the various schools of geometric thought at that time, and candidly exposes some personal traits of the giants of mathematics of the nineteenth century, especially Riemann, Weierstrass, Lie, Klein, Dirichlet, Möbius, Steiner, Jacobi, and Cayley.

I strongly recommend this monograph for anyone interested in learning about the somewhat tortuous path of development of

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modern geometry. It would certainly be desirable to have this monograph translated into English. The translation would, however, require a certain amount of effort, since, unfortunately, there is no bibliography, while in the text there are numerous references to the works of the above-mentioned mathematicians.

NIKOLAI IVANOVICH FUSS: 1755-1826. By V. I. Lysenko. (In Russian.) Moscow (Nauka). 1975. 119 pp.

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In 1766, after spending 25 years in Berlin, Leonhard Euler returned to St. Petersburg [1]. Although his mathematical creativity had not diminished, his failing eyesight and the general deterioration of his health made it increasingly difficult for him to work unaided. Almost completely blind in 1772, Euler wrote to his old friend in Basel, Daniel Bernoulli. (Daniel Bernoulli and his father, Johann, had helped to secure Euler's original invitation to join the Petersburg Academy of Sciences in 1727.) Euler asked Bernoulli to recommend one of his students as a secretary, to assist in the preparation of his papers and in the conduct of his extensive scientific correspondence; Nicholas Fuss, then 17 years old, was selected. He arrived in Petersburg in July 1772 and took up residence in Euler's home. Fuss remained there until Euler's death in 1783, working 8 or 9 hours a day, reading aloud papers and letters, taking down Euler's ideas, carrying out computations, and preparing Euler's manuscripts for publication. Although Euler was also assisted in this manner by several other students, Fuss and M. E. Golovin (the nephew of Lomonosov, who played a leading role in founding Moscow University) were most frequently asked to write his papers. Of all his disciples, Fuss was certainly the one closest to Euler.

Euler was sufficiently impressed with Fuss' abilities to recommend his young secretary as an *Adjunt* to the Academy of Sciences in 1776. Several months before Euler's death in 1783, Fuss became a full member of the Academy. In 1800, only months after becoming a Russian citizen, he was appointed permanent secretary, replacing Euler's oldest son who had just died. In this capacity and in his role as a member of the *Committee on National Education,* charged with the responsibility of reforming the mathematics curricula in the gymnasia and secondary schools, Fuss emerged as one of the most influential scientific figures in Russia during the first quarter of the 19th century.

Fuss published some 114 scholarly papers in diverse fields--algebra, differential equations, infinite series and products, physics, astronomy, and geometry [Lysenko 1975, 93-102]. The